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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

November 1,
1939

ANNUAL FOREST INSECT

INFESTATION REPORT

FOR

YOSEMITE NATIONAL PARK,

CALIFORNIA.

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
YOSEMITE NATIONAL PARK
CALIFORNIA

OFFICE OF THE SUPERINTENDENT

November 1, 1939

Narrative Report to Accompany Form No: 10-423, Annual Forest Insect Report:

The information reported upon in this report for 1939 is obtained from general observations, trail counts, strip surveys, 100% cruises of permanent sample plots aggregating 720 acres, and observations made in actual control operations in the sugar and ponderosa pine types of the park either undertaken last spring or now under way in several of the control units. Additional information was obtained from representatives of the Bureau of Entomology and Plant Quarantine engaged in experimental work and infestation surveys. A comprehensive survey was made of the forests in the Mariposa Grove of Big Trees by a field party under the direction of George Struble of the Bureau. Some of the data on current infestation is included in this report. The other permanent sample plots of the Bureau located at Aspen Valley, Badger Pass, and Pot Hole Meadows were also cruised by that organization for the annual loss data.

The lodgepole pine types of the park were covered in their entirety by Ranger-Forester McKim and a detailed ranger assistant in a survey that began on July 5 and was completed on September 7. This extended survey was by means of saddle and pack animals. A practically 100% coverage was made of all forest types not available to other means of transportation.

The possibilities of an increase during the past year in the amount of infestation present within the sugar and ponderosa pine types indicated in last year's annual report have become a reality. There has been a noticeable and disconcerting increase particularly in the Mariposa Grove of Big Trees, the Merced Grove of Big Trees, portions of the Big Meadows and Crane Flat units, in the Carl Inn Addition authorized to the park, Yosemite Valley, and in the Wawona Basin unit. The sugar pine types infestations have been particularly noticeable with 25 large-sized sugar pine being infested in the Merced Grove of Big Trees and approximately 60 similarly large sugar pine being reported for the Mariposa Grove of Big Trees. Some of these are top-killed and will bear watching for further development of the broods. The ponderosa pine types also show an increase general throughout the areas mentioned. In both of these forest types a tendency for grouping of the attacks is noticeable, a condition that has not been observed since the peak of the epidemics of 1930-1934. This widespread increase, not altogether confined to Yosemite, can be due to one or a combination of all of the following factors: the hot, dry summer, the cessation of summer insect control operations, the non-treating of areas inaccessible to the labor available, the leaving of a large

number of windfalls unpeeled in the forests, the cessation of logging operations on lands immediately adjacent to the Carl Inn Addition, and the non-treatment of infestations adjacent to the park. where are they?

Lodgepole Pine Needleminer

Again the outstanding insect epidemic is the lodgepole pine needleminer, Recurvaria milleri Busck. in the lodgepole pine which has continued to increase in area and to some extent in intensity. The most aggressive areas remain the same as last year and they include the Forsyth Pass area in the Sunrise unit; Rodgers Canyon area of the Piute unit; the Needleminer Lakes, Bear Valley, and Merrick Canyon areas of the Rancheria unit; and epidemic conditions have now been reported for the Virginia Canyon area in the Return Creek unit and for the Benson Lake Basin areas of the Piute Creek unit. Control operations within the present needleminer epidemic areas are not recommended for the same reasons advanced in last year's report on these areas, i.e. the impracticability under present conditions.

There has been a noticeable but not alarming increase in the amount of needleminer infestation in those solid and extensive lodgepole pine forests immediately north of Tuolumne Meadows, an area which is being closely watched for developments. In Tuolumne Meadows proper, needleminer infestation appears to have remained as it was (very little), or even to have declined.

The very favorable development reported last year for the lodgepole pine types south and east of the Merced River was confirmed this year in the apparent lack of any needleminer infestation whatsoever.

Barkbeetles of the genus Dendroctonus.

At the present time two CCC insect control crews totalling 50 men supervised by capable and experienced foremen, are engaged in bringing the Dendroctonus infestations in the Mariposa Grove of Big Trees under control. It should be possible to completely treat this area before heavy snows of winter prevent further operations within the Grove. Unless unforeseen obstacles arise, these insect control crews will have treated all of the accessible trees within the Wawona Basin, the Wawona Road, and the lower portions of the Chilnualna Creek units, also the Pothole and Mono Meadows areas of the Bridalveil Creek unit, and possibly portions of the Tunnel-Chinquapin unit before next spring's fire hazard weather. Another insect control crew under an experienced and capable foreman has finished treating the known infested trees in Yosemite Valley and is now treating in Sections 25 and 36 in the Big Meadows unit. After completing the treating of the Big Meadows unit, attempts will be made to treat portions of the Crane Flat unit and then tie in with any operations that may have occurred in the Tunnel-Chinquapin unit. A small amount of treating, suspended because the CCC camps at Middle Fork, Crane Flat, and Tamarack Flat have left, occurred this fall in the Merced Grove of Big Trees and Gin Flat areas of the Crane Flat unit and in Sections 1 and 2 in the Carl Inn area authorized for addition to the park. It will thus be seen that the

best part of the sugar and ponderosa pine types south and east of the Crane Flat control unit will be under treatment while those infestations north and west of the Big Meadows unit will continue to exist without any benefit of control work.

Since the CCC took over all insect control work in the summer of 1934, the Crane Flat unit has received relatively little treatment, while those control units north of this unit have received practically no treatment. There are two causes for this non-treatment: the first being that CCC camps were not available for control work in these units at the time of the year when the most effective efforts can be made, and second, funds have not been available to carry out the work with other labor. The cessation of logging operations in those areas immediately adjacent to the Carl Inn Addition has, as was expected, definitely increased the Dendroctonus populations in the sugar and ponderosa pine forests recently acquired by the Government at great cost. Unless some attempts at control are undertaken in the near future in these control units, the possibilities of the buildup of a serious bark beetle infestation will remain with us. The infestation is now at a point that warrants control, and it is urgently recommended that funds be provided to carry out this necessary control work early in the spring of 1940 by regularly employed labor. The CCC camps will come in too late in 1940 to be of any assistance. First-class insect control tools and equipment are available to outfit at a moment's notice an organization of 75 men. The bulk of the treating on these units should be completed by the 15th of May, and the funds should be available by the first of January, 1940, so that the field organization can be ready to go to work at the first opportunity.

It is estimated that $7,500 will be sufficient to carry out effective control operations by per diem labor on the approximately 60,000 acres to be protected in the sugar and ponderosa pine types in the Carl Inn Addition, Crane Flat, El Capitan, Bald Mountain, Middle Fork, Hetch Hetchy, and Miguel Meadows control units on which it is estimated that a total of 1200 to 1500 trees containing 2,400,000 to 4,000,000 feet board measure may be treated. Funds for insect control should permit work weeks of seven days, eight hours for each man, if this is found necessary, for short periods.

This is 13 trees per section.

Should Miguel Meadows be included?

A $7,500 allotment would be necessary to treat those control areas and units which cannot be adequately handled by the present CCC program. CCC labor will, with the camps available, adequately handle those areas within their limits of transportation, but some provision must be made to treat those areas outside of their spheres of operation. To be of greatest benefit, this additional control work should be completed by the beginning of the 1940 fire season and it is for this reason that the funds should become available as soon as possible after the first of January, 1940 for insect control work during the spring of 1940. We urge that, if at all possible, these funds be made available.. Although the CCC organization does very excellent work, it is not as flexible as per diem labor and is not available in these areas during the season when insect control work is most effective.

Conditions in the Illilouette Creek unit have not shown much change in either direction. Any funds that may be left over from control work on the west side of the park could be used to advantage in this unit.

It is anticipated that maintenance control against the mountain pine beetle, Dendroctonus monticolae will be undertaken next summer from the stub camps located along the Tioga Road.

Minor Insect Infestations

No sign has been seen of the elm leaf beetle, Galerucella xanthomelaena Schrank, formerly responsible for serious defoliation of the few elms in the Old Village.

The same can be said for the alder flea beetle, Haltica bimarginata Say, which several years ago was epidemic throughout the State of California.

The oyster shell scale, Lepidosaphes ulmi Linn. continues to be present as a common infestation on the willows and alders and in some cases on other deciduous brush and tree species of the park. No control work has been undertaken to date against this insect except in a few minor instances around residences.

The hemlock bark borer, Melanophila drummondi still shows its presence in a very few inaccessible dead and dying Douglas fir on the talus slopes of Yosemite Valley and those near Hetch Hetchy dam. It is no longer a problem.

Form No. 10-423.

UNITED STATES
DEPARTMENT OF THE INTERIOR
National Park Service
Washington

1939 Annual Forest Insect Report

Yosemite National Park
(Name of national park or monument)

Name of plant species attacked	Name of attacking insect	Infestation (control units) Location	Extent	Damage	Status	Opening and closing dates for control	Control: Treatment Last year	This year	Next year	Estimated total cost next year
1	2	3	4	5	6	7	8	9	10	11
Sugar pine	Dendroctonus monticolae	Big Meadows.	general 10 per sect.	killed	slight increase ?	March 1 May 15	Partially treated	Nov	Complete	CCC
"	"	Tunnel-Chinquapin	general 10 per sect.	killed	slight increase	November 1 May 15	Part treated	Part treated	Complete	CCC
"	"	Wawona Rd	general 5 per sect	killed	slight increase?	November 1 May 15	Complete	Complete	Complete	CCC
"	"	Wawona Basin includes Mariposa G.	general 10 per sect	killed	increase	Oct. 15 June 1	Part treated	Nov	Complete	CCC
Ponderosa pine	Dendroctonus brevicomis	Big Meadows.	general 15 per sect.	killed	increase?	March 1 May 15	Part treated	Nov	Complete	CCC
		Tunnel-	general 15 per sect.	killed	increase	November 1 May 15	Part treated	Part treated	Complete	CCC

Date or period of survey: All year plus annual survey period in October

Submitted by: _____

Unit of survey: Park at large, biological control units
(Park at large, ranger district, biological control unit)

Title: Assistant Forester

Date: October 26, 1939

Method of survey: General observations, sample plots
(General observations, systematic examination by campgrounds, strips, plots, watersheds, tree census, or otherwise)

Instructions for preparing report

The report is due not later than November 1 of each year for the preceding 12-month period. If surveys in different control units or ranger districts within a park or monument are made by different individuals, each individual shall make out one of these forms together with an accompanying narrative report.

Distribution of copies:

Original: Regional Director, Attention Regional Forester.
One copy: Director, Attention Chief Forester.
One copy: Entomological field representative, Bureau of Entomology and Plant Quarantine.
One copy: Park or monument files.

This report is to be supplemented with a detailed narrative report in accordance with the attached outline and also with a map showing the location of any new infestation or infestations of epidemic proportions.

All infestations within a park are to be reported on one sheet unless additional space is needed except the following:

1. Infestations of epidemic proportions which should be reported on separate sheets.
2. Surveys made by different individuals which should be reported by each individual on separate sheets.
3. Surveys made by ranger districts or biological control units which should be reported on separate sheets for each ranger district or biological control unit concerned.

Explanation of column headings

1 State scientific and/or common name or names of tree, shrub, or other plant species attacked by the insect.

2 State scientific and/or common name of the insect if known. If unknown, so state, and indicate its general type, whether bark beetle, borer, defoliator, leaf miner, gall aphis, budworm, twig pruner, etc.

3 Indicate whether infestation is general throughout the park or restricted to certain stated areas. Reference the site of the infestation to geographical or cultural features that are commonly known and named on the official map of the park. Examples are: Summit of Beech Knob; Battery 5; Tuolumne Meadows; Shirttail Canyon; Whitman Creek; Campground No. 12; etc.

4 If infestation is limited or confined to a few scattered trees state number of trees attacked. If restricted to roadsides state miles of same affected. If widespread state acreage and average number of trees per acre attacked.

5 Indicate severity of damage caused by the infestation. State whether trees are killed, dying, weakened, defoliated, or otherwise injured by the insect as a primary cause.

6 State whether infestation is a new or old one. If old indicate whether it has increased, decreased, or remained the same since last year.

7 State approximate opening and closing dates of applied control.

8 State what treatment was applied last year, if any, and to what extent it was responsible for any change indicated in column 9.*

9 State what treatment was applied this year, if any, and to what extent it appears to have been effective.*

10 State what treatment is recommended for next year, if any.*

11 Indicate approximate cost in man-days and materials separately of treatment recommended under 10.

* Give exact formula of any sprays or chemicals used or recommended, or indicate S. F. No. as listed in Tree Preservation Bulletin No. 6. State also date or dates of application.

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DEPARTMENT OF THE INTERIOR
National Park Service
Washington

1939 Annual Forest Insect Report

Yosemite National Park
(Name of national park or monument)

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1	2	3	4	5	6	7	8	9	10	11
Ponderosa pine	Dendroctonus brevicomis	Wawona Rd.	general 15 per sect.	killed	increase	November 1 May 15	Complete	Complete	Complete	CCC
		Wawona Basin	general 15 per sect.	killed	Increase	Oct. 15 June 1	Part treated	Now	Complete	CCC
Sugar pine	Dendroctonus monticolae	Crane Flat unit	general 20 per sect.	killed	increasing	March 1 ? June 15	Very little	Small amount	see below	see below
"	"	El Capitan	general 10 per sect	killed	increasing	April 15 June 15	None	None		
"	"	Carl Inn Addition	general 20 per sect	killed	increasing	March 1? May 15	None	Very little		
"	"	Bald Mtn.	general 15 per sect.	killed	increasing?	March 1 ? June 15	None	None		
"	"	Hetch Hetchy	general 10 per sect.	killed	static, may be increasing	March 1 ? May 1	Very little	None		

Date or period of survey: All year plus annual survey period in October

Unit of survey: Park at large, biological control units
(Park at large, ranger district, biological control unit)

Method of survey: General observations, sample plots, strip surveys
(General observations, systematic examination by campgrounds, strips, plots, watersheds, tree census or otherwise)

Submitted by: _____

Title: Assistant Forester

Date: October 26, 1939

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1	2	3	4	5	6	7	8	9	10	11
Sugar Pine	Dendroctonus monticolae	Middle Fork	general 10 per sect.	killed	static, may be increasing	May 1 June 15	None	None		
Ponderosa Pine	Dendroctonus brevicomis	Bald Mountain	general 20 per sect.	killed	increasing?	March 1? June 15	None	None		
		Hetch Hetchy	general 20 per sect.	killed	increasing?	March 1? May 1	Very little	None		
		Miguel Meadows	general 20 per sect.	killed	static, may be increasing	May 1 June 15	None	None		

It has been estimated that $7,500 will be needed and it is recommended that this amount be made available for the spring of 1940 for the treating of approximately 1200 to 1500 trees with an estimated volume between 2,500,000 and 4,000,000 board feet on the approximately 60,000 acres embraced within the control units named above, i.e., sugar and ponderosa pine types.

Date or period of survey: All year plus annual survey period in October.

Unit of survey: Park at large, biological control units
(Park at large, ranger district, biological control unit)

Method of survey: General observations, sample plots, strip surveys
(General observations, systematic examination by campgrounds, strips, plots, watersheds, tree census, or otherwise)

Submitted by: _____

Title: Assistant Forester

Date: October 26, 1939.

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DEPARTMENT OF THE INTERIOR
National Park Service
Washington

1939 Annual Forest Insect Report

Yosemite National Park, California
(Name of national park or monument)

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1	2	3	4	5	6	7	8	9	10	11
Lodgepole pine	Recurvaria milleri Busck.	Rancheria, N.M.Lakes. Bear Valley Kerrick C. Piute Creek, Benson Basin. Rodgers C. Return Creek, Virginia Can. Sunrise,Unit, Forsyth Pass.	widespread in slightly more than 10,000 acres.	defoliated and killed in thousands of trees.	epidemic	none	none	none	none	none
Lodgepole pine	D.monticolae	Rancheria, N.M. Lakes Piute Creek, Rodgers Can.	4 sections	killed	epidemic	none	none	none	none	none
Jeffrey pine	D.jeffreyi	Piute Cr. unit.	2,000 acres	killed & dying	Mod. Epidemic	none	none	none	none	none

Note: Control unit designations underlined, areas within these control units not underlined.

Date or period of survey: July 5 - Sept. 7, 1939

Submitted by: F.A.McKim

Unit of survey: Park at large, and biological control units.
(Park at large, ranger district, biological control unit)

Title: Ranger-forester

Method of survey: Trail counts and general observations, some detailed examinations.
(General observations, systematic examination by campgrounds, strips, plots, watersheds, tree census, or otherwise)

Date: October 23, 1939

Instructions for preparing repor

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DEPARTMENT OF THE INTERIOR
U. S. GEOLOGICAL SURVEY

TOPOGRAPHIC MAP
OF
YOSEMITE NATIONAL PARK
CALIFORNIA

FROM GEOLOGICAL SURVEY MAPS
Surveyed between 1898 and 1909
Roads and trails added 1928 by National Park Service

Scale 1:62500

3 0 1 2 3 4 5 Miles
5 0 1 2 3 4 5 Kilometers

Contour interval 100 feet.
Datum is mean sea level.

To place on North American datum move projection lines 690 feet south and 300 feet west
South of Lat. 38° and west of Long. 119° 30', elevations are 85 feet too high
Polyconic projection

Boundary of Yosemite National Park, as extended by proclamation approved August 13, 1932

Hetch Hetchy and Lake Eleanor reservoirs shown in hatched blue lines, from approximate information only

Edition of 1929, reprinted 1932

Jack Main 67,976.00 A
Kibbie 11,878.40 A
Rancheria 69,300.60 A
Piute Creek 44,952.00 A
Return Creek 54,784.00 A
Miguel Meadows 17,283.20 A
Hetch Hetchy 8,217.60 A
Colby Mt 9,149.60 A
Middle Fork 46,003.20 A
Delaney Creek 14,309.40 A
Cathedral Creek 15,566.00 A
Tuolumne Mdw 13,867.20 A
Tenaya 9,036.80 A
Parker Pass 8,806.40 A
Bald Mt 8,192.00 A
Lyell Canyon 18,600.00 A
Yosemite Creek 28,313.60 A
Porcupine Flat 45,564.80 A
Echo Creek 7,900.40 A
Tuolumne Pass 4,625.60 A
Crane Flat 20,920.80 A
El Capitan 8,934.40 A
Sunrise 45,081.60 A
Big Meadows 5,324.80 A
Tunnel Chinquapin 9,907.20 A
Merced Lake Drainage 45,184.00 A
Bridalveil Creek 14,768.00 A
3,114.40 A
Tilihouette Creek 41,292.80 A
Wawona Road 17,638.40 A
Moraine Mdw 26,291.20 A
Chilnualna Creek 14,873.60 A
Wawona Basin 16,896.00 A

SYMBOLS.

Developing Ghost Forests

Epidemic needleminer infestations.

Mixed epidemic infestations; bark beetle and needleminer.

Areas to be treated with appropriated funds.

Boundaries of insect control units.

EFE 11-1-39

CONVENTIONAL SIGNS

- Park Limits
- Roads and buildings
- Poor or private roads
- Trails
- Railroad and station
- Bridges
- Dam
- U.S. township and section lines
- Section corner recovered
- County boundary
- Reservation boundary
- Land grant boundary
- Old State park boundary
- Triangulation station
- Bench marks
- Contours (showing height above sea, horizontal form, and steepness of slope of the surface)
- Depression contours
- Figures (showing height above mean sea level, instrumentally determined)
- Spring
- Intermittent streams
- Fresh marsh
- Glacier

ENGRAVED AND PRINTED BY THE U.S.GEOLOGICAL SURVEY

10-23
(May 1929)
6—7410

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

..... NATIONAL PARK

FILE NO.

IMPORTANT

This file constitutes a part of the official records of the National Park Service and should not be separated or papers withdrawn without express authority of the official in charge.

All Files should be returned promptly to the File Room.

Officials and employees will be held responsible for failure to observe these rules, which are necessary to protect the integrity of the official records.

ARNO B. CAMMERER,
Director.

U. S. GOVERNMENT PRINTING OFFICE: 1933 6—7410